

# ELR H5-I-PT-24DC/500AC-2-L - Hybrid motor starter



1199926

<https://www.phoenixcontact.com/in/products/1199926>

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Hybrid motor starter, for reversing 3~ AC motors up to 550 V AC/2.4 A, 24 V DC input, class 10 tripping characteristic, overload function, without symmetry monitoring, and without phase failure and underload detection. 1-phase motors can be switched.

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1199926       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | *****         |
| Product key                          | DK7422        |
| GTIN                                 | 4063151262891 |
| Weight per piece (including packing) | 284 g         |
| Weight per piece (excluding packing) | 217.7 g       |
| Customs tariff number                | 85371098      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                |                       |
|----------------|-----------------------|
| Product type   | Hybrid motor starters |
| Product family | CONTACTRON            |
| Operating mode | 100% operating factor |

### Electrical properties

|                                                 |                              |
|-------------------------------------------------|------------------------------|
| Number of phases                                | 3                            |
| Motor starter type                              | Reversing starter            |
| Switching frequency                             | $\leq 2$ Hz (Load-dependent) |
| Maximum power dissipation for nominal condition | 2.2 W                        |
| Switching frequency                             | $\leq 2$ Hz (Load-dependent) |
| Maximum power dissipation                       | 3.3 W                        |
| Minimum power dissipation                       | 1.1 W                        |
| Coordination type                               | 1                            |

### Supply

|                                            |                             |
|--------------------------------------------|-----------------------------|
| Rated control circuit supply voltage $U_S$ | 24 V DC                     |
| Control supply voltage range               | 19.2 V DC ... 30 V DC       |
| Rated control supply current $I_S$         | 40 mA                       |
| Protective circuit                         | Surge protection            |
|                                            | Reverse polarity protection |

### Insulation characteristics

|                                                                                                                            |                                                                           |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Rated insulation voltage                                                                                                   | 500 V                                                                     |
| Rated surge voltage                                                                                                        | 6 kV                                                                      |
| Overvoltage category                                                                                                       | III                                                                       |
| Degree of pollution                                                                                                        | 2                                                                         |
| Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit | Safe isolation (IEC 60947-1) at operating voltage $\leq 300$ V AC         |
|                                                                                                                            | Safe isolation (EN 50178) at operating voltage $\leq 300$ V AC            |
|                                                                                                                            | Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC |
|                                                                                                                            | Safe isolation (EN 50178) at operating voltage 300 ... 500 V AC           |
| Isolation characteristics between the control input and control supply voltage to auxiliary circuit                        | Safe isolation (IEC 60947-1) in the auxiliary circuit $\leq 300$ V AC     |
|                                                                                                                            | Safe isolation (EN 50178) in the auxiliary circuit $\leq 300$ V AC        |

### Input data

#### Control

|                               |                          |
|-------------------------------|--------------------------|
| Input name                    | Control input right/left |
| Rated actuating voltage $U_C$ | 24 V DC                  |
| Triggering voltage range      | 19.2 V DC ... 30 V DC    |
| Rated actuating current $I_C$ | 5 mA (Input type 1)      |
| Switching threshold           | 9.6 V ("0" signal)       |

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|                       |                             |
|-----------------------|-----------------------------|
|                       | 19.2 V ("1" signal)         |
| Typical turn-off time | < 30 ms                     |
| Protective circuit    | Reverse polarity protection |

## Output data

### AC output

|                                                   |                                    |
|---------------------------------------------------|------------------------------------|
| Rated operating voltage $U_e$                     | 500 V AC                           |
| Operating voltage range                           | 42 V AC ... 550 V AC               |
| Rated operating current $I_e$                     | 2.4 A (AC-51)                      |
|                                                   | 2.4 A (AC-53a)                     |
| Mains frequency                                   | 50/60 Hz                           |
| Load current range                                | 180 mA ... 2.4 A (see to derating) |
| Trigger characteristic in acc. with IEC 60947-4-2 | Class 10                           |
| Cooling time                                      | 20 min (for auto reset)            |
| Leakage current                                   | 0 mA                               |
| Protective circuit                                | Surge protection                   |

### Acknowledge output

|                                                     |                                                            |
|-----------------------------------------------------|------------------------------------------------------------|
| Note                                                | Confirmation: floating change-over contact, signal contact |
| Switching capacity in accordance with IEC 60947-5-1 | 3 A (230 V, AC15)                                          |
|                                                     | 2 A (24 V (DC13))                                          |

## Connection data

### Control circuits

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in connection                          |
| Stripping length                 | 10 mm                                       |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 24 ... 14                                   |

### Load circuit

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in connection                          |
| Stripping length                 | 10 mm                                       |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 24 ... 14                                   |

## Signaling

|                           |              |
|---------------------------|--------------|
| Status display            | LED (yellow) |
| Operating voltage display | Green LED    |
| Error indication          | Red LED      |

## Dimensions

|       |         |
|-------|---------|
| Width | 22.5 mm |
|-------|---------|

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|        |          |
|--------|----------|
| Height | 107.5 mm |
| Depth  | 114 mm   |

## Material specifications

|                                        |              |
|----------------------------------------|--------------|
| Flammability rating according to UL 94 | V0 (Housing) |
|----------------------------------------|--------------|

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                     |
|-----------------------------------------|-------------------------------------|
| Degree of protection                    | IP20                                |
| Ambient temperature (operation)         | -25 °C ... 70 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                    |
| Altitude                                | ≤ 2000 m                            |

## Approvals

### UKCA

|             |                |
|-------------|----------------|
| Certificate | UKCA-compliant |
|-------------|----------------|

### UL approval

|             |              |
|-------------|--------------|
| Certificate | NLDX.E228652 |
|-------------|--------------|

### UL data

|                    |                                                                        |
|--------------------|------------------------------------------------------------------------|
| SCCR               | 100 kA (500 V AC (fuse: 30 A class CC/30 A class J (high fault)))      |
|                    | 5 kA (500 V AC (fuse: 20 A RK5 (standard fault)))                      |
| FLA                | 2.4 A (500 V AC)                                                       |
| Group installation | 20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)       |
|                    | 30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max. solid and stranded) |
| Category code      | NLDX / NRNT                                                            |

## Standards and regulations

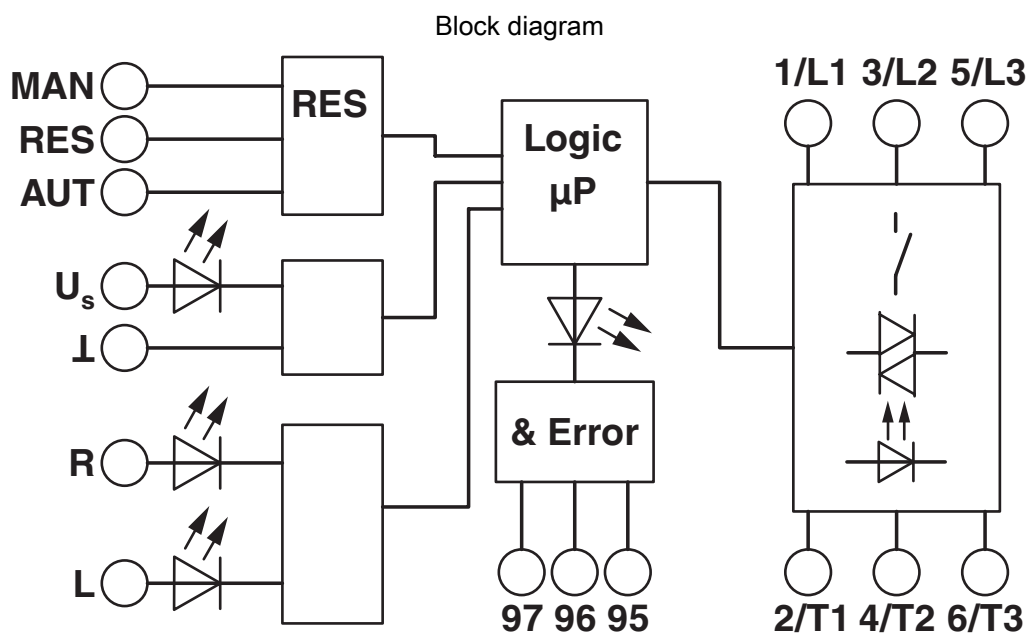
### Standards/regulations

|                       |               |
|-----------------------|---------------|
| Standards/regulations | IEC 60947-1   |
|                       | IEC 60947-4-2 |
|                       | IEC 61508     |
|                       | ISO 13849     |

## Mounting

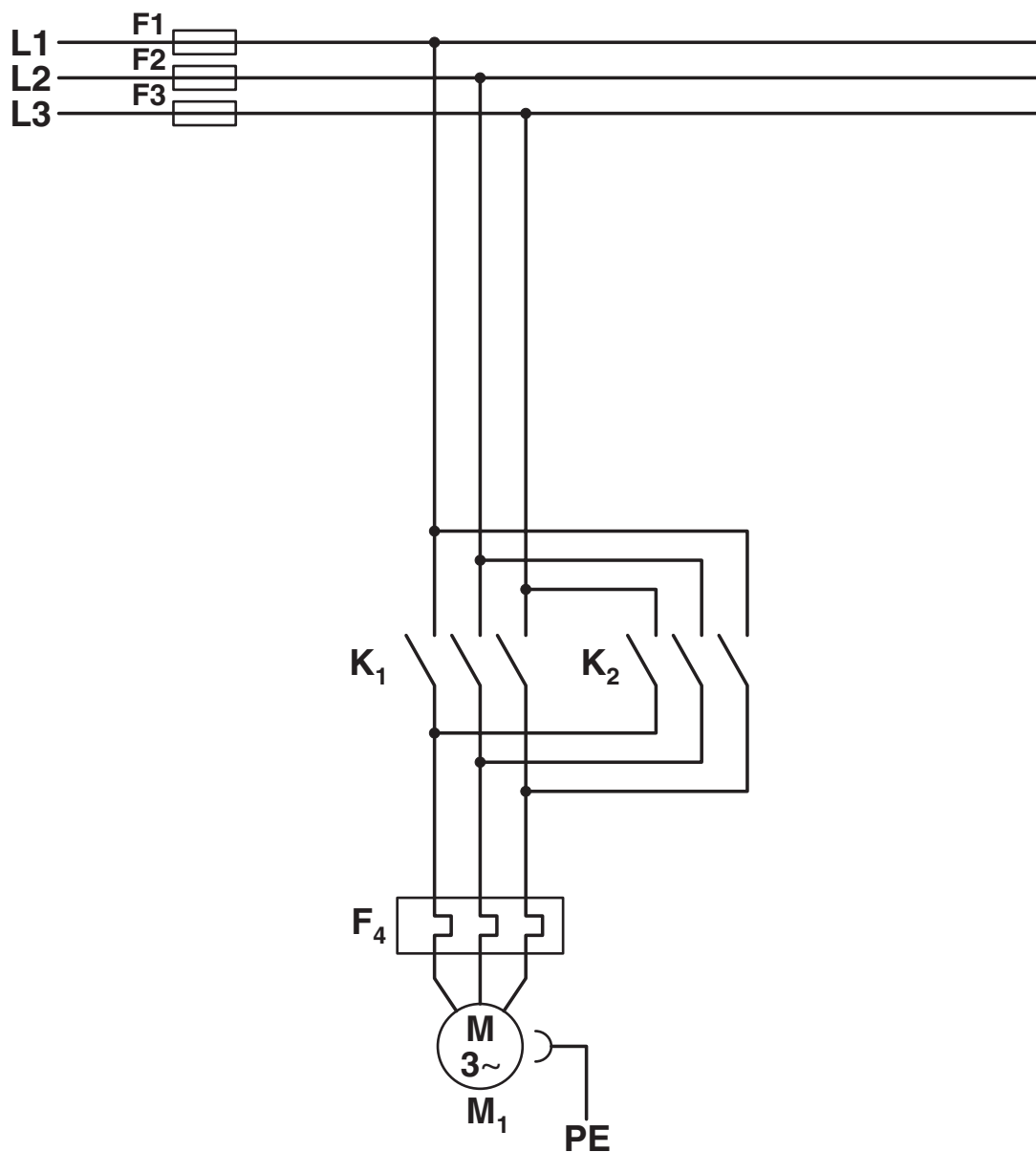
|                   |                                                    |
|-------------------|----------------------------------------------------|
| Mounting type     | DIN rail mounting                                  |
| Assembly note     | alignable, for spacing see derating                |
| Mounting position | vertical (horizontal DIN rail, motor output below) |

## Drawings





Circuit diagram



## Conventional structure

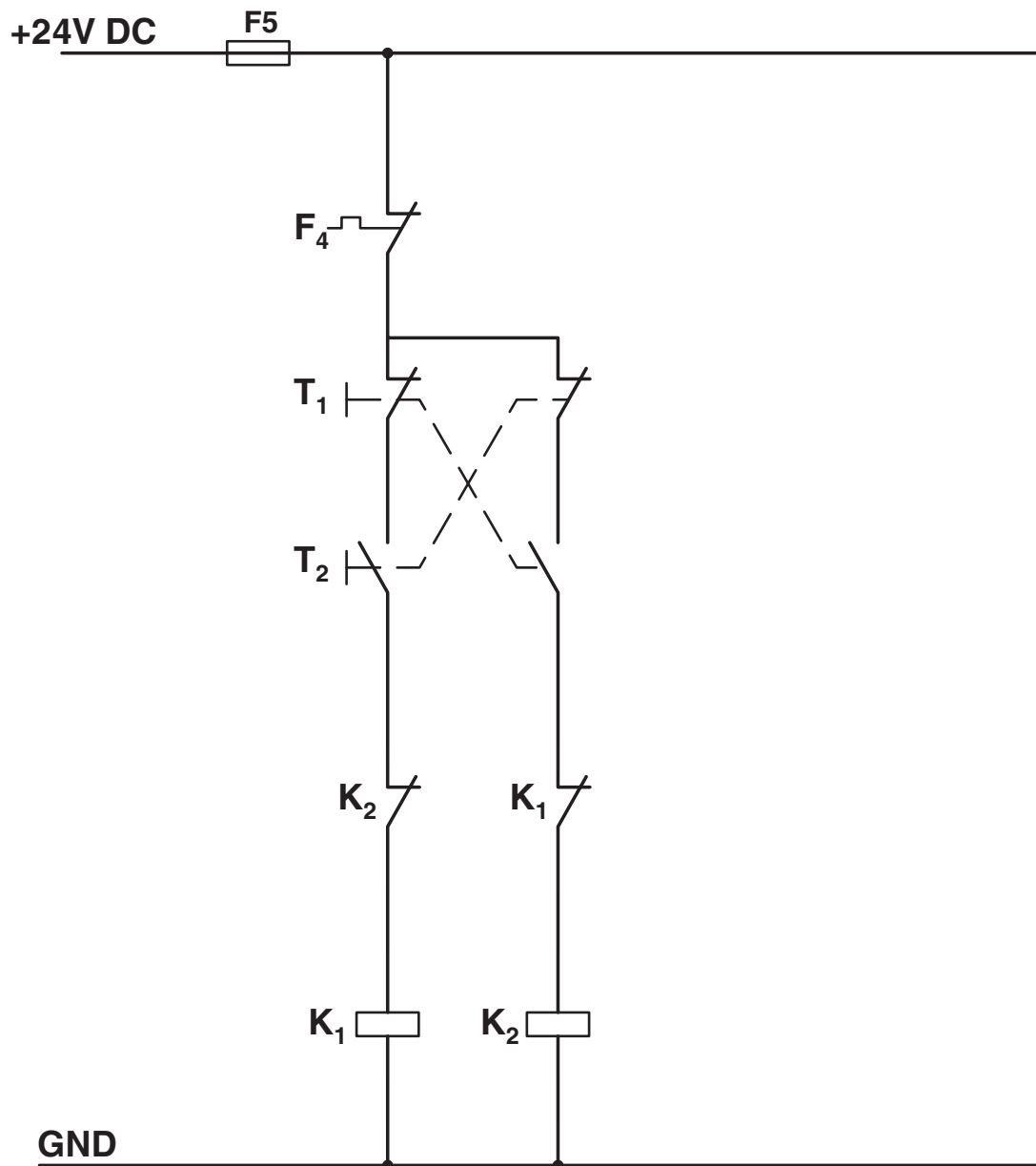
Main current path contactor

K1 = Left contactor

K2 = Right contactor

F4 = Motor protection relay

Circuit diagram



## Conventional structure

Control current path contactor

K1 = Left contactor

K2 = Right contactor

T1 = Left, T2 = Right

F4 = Motor protection relay



The diagram illustrates a three-phase motor control circuit. It features a main switch  $K_1$  with three contacts  $T_1$ ,  $T_2$ , and  $T_3$  connected to the three-phase supply lines  $L1$ ,  $L2$ , and  $L3$ . The motor  $M$  (labeled  $3\sim$  and  $M_1$ ) is connected to the switch contacts. A protective device, represented by a triangle with a diagonal line, is connected between the supply lines and the motor. The motor's frame is grounded to the PE (Protective Earth) line. A separate branch of the circuit includes a thermal relay  $K_1$  with two contacts  $T_1$  and  $T_2$  connected to the supply lines. The relay is labeled with  $+U_s$ ,  $R$ , and  $L$ , and is grounded to the GND line. The entire system is powered by a three-phase supply (L1, L2, L3) and a +24V DC source, with a common ground (GND).

T1 = Right, T2 = Left

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1199926>



**EAC**  
Approval ID: RU\*C-DE.\*08.B.00520\*



**UL Listed**  
Approval ID: FILE E 323771



**CCC**  
Approval ID: 2016010304871315



**cUL Listed**  
Approval ID: FILE E 323771



**cUL Listed**  
Approval ID: E228652



**UL Listed**  
Approval ID: E228652

Classifications

ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27370905 |
| ECLASS-13.0 | 27370905 |
| ECLASS-12.0 | 27370905 |

ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001037 |
|----------|----------|

UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 25173900 |
|-------------|----------|

## Environmental product compliance

## EU RoHS

|                                         |              |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 7(a), 7(c)-I |

## China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

## EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 030296e3-e37b-4edd-a2c7-b9384743ae78 |

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## Accessories

### BRIDGE-PT 1 - Bridge

1161777

<https://www.phoenixcontact.com/in/products/1161777>

3-phase loop bridge for 1 CONTACTRON module, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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### BRIDGE-PT 2 - Bridge

2904490

<https://www.phoenixcontact.com/in/products/2904490>

3-phase loop bridge for 2 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 3 - Bridge

2904491

<https://www.phoenixcontact.com/in/products/2904491>

3-phase loop bridge for 3 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 4 - Bridge

2904492

<https://www.phoenixcontact.com/in/products/2904492>

3-phase loop bridge for 4 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 5 - Bridge

2904493

<https://www.phoenixcontact.com/in/products/2904493>

3-phase loop bridge for 5 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 6 - Bridge

2904494

<https://www.phoenixcontact.com/in/products/2904494>

3-phase loop bridge for 6 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 7 - Bridge

2904495

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3-phase loop bridge for 7 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 8 - Bridge

2904496

<https://www.phoenixcontact.com/in/products/2904496>

3-phase loop bridge for 8 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m





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## BRIDGE-PT 9 - Bridge

2904497

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3-phase loop bridge for 9 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 10 - Bridge

2904498

<https://www.phoenixcontact.com/in/products/2904498>

3-phase loop bridge for 10 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m



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## BRIDGE-PT 1-1M - Bridge

1161778

<https://www.phoenixcontact.com/in/products/1161778>

3-phase loop bridge for 1 CONTACTRON module, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m



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## BRIDGE-PT-2-1M - Bridge

1049407

<https://www.phoenixcontact.com/in/products/1049407>

3-phase loop bridge for 2 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m



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## BRIDGE-PT-3-1M - Bridge

1049408

<https://www.phoenixcontact.com/in/products/1049408>

3-phase loop bridge for 3 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m



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## BRIDGE-PT-4-1M - Bridge

1049409

<https://www.phoenixcontact.com/in/products/1049409>

3-phase loop bridge for 4 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m



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## BRIDGE-PT-5-1M - Bridge

1049413

<https://www.phoenixcontact.com/in/products/1049413>

3-phase loop bridge for 5 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m



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## BRIDGE-PT-2-2M/0,3M - Bridge

1107649

<https://www.phoenixcontact.com/in/products/1107649>

3-phase loop bridge for 2 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m



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## BRIDGE-PT-3-2M/0,3M - Bridge

1107650

<https://www.phoenixcontact.com/in/products/1107650>



3-phase loop bridge for 3 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

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## BRIDGE-PT-4-2M/0,3M - Bridge

1107644

<https://www.phoenixcontact.com/in/products/1107644>



3-phase loop bridge for 4 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

# ELR H5-I-PT-24DC/500AC-2-L - Hybrid motor starter



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## US-EMLP (15X5) - Plastic label

0828790

<https://www.phoenixcontact.com/in/products/0828790>



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

## UC-EMLP (15X5) - Plastic label

0819301

<https://www.phoenixcontact.com/in/products/0819301>



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

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PHOENIX CONTACT (I) Pvt. Ltd.

A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420

[info@phoenixcontact.co.in](mailto:info@phoenixcontact.co.in)